

April 4, 2003

L-PI-03-039  
10CFR50.55a

U S Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

**PRAIRIE ISLAND NUCLEAR GENERATING PLANT**

**DOCKET NOS. 50-282 AND 50-306**

**LICENSE NOS. DPR-42 AND DPR-60**

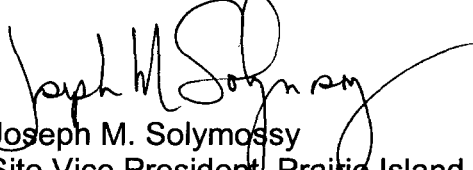
**TITLE: RESPONSE TO OPPORTUNITY FOR COMMENT ON TASK INTERFACE AGREEMENT (TIA) 2003-01, "APPLICATION OF ASME CODE SECTION XI, IWB-2430 REQUIREMENTS ASSOCIATED WITH SCOPE OF VOLUMETRIC WELD EXPANSION AT THE PRAIRIE ISLAND NUCLEAR GENERATING PLANT" (TAC NOS. MB7294 AND MB7295)**

The Nuclear Regulatory Commission's (NRC's) Region III staff requested technical assistance from the Office of Nuclear Reactor Regulation regarding the application of American Society of Mechanical Engineers, Code Section XI, IWB-2430 requirements associated with scope of the expansion of volumetric weld examinations at Prairie Island Nuclear Generating Plant (PINGP). The NRC offered, by letter dated February 6, 2003, the Nuclear Management Company (NMC) an opportunity to comment on the issues raised by the Region's questions.

The attachment to this letter provides our comments on the issues raised in the subject TIA 2003-01.

This letter contains no new commitments and no revisions to existing commitments.

Please contact Jack Leveille (651-388-1121, Extension 4142) if you have any questions related to this letter.

  
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CC Regional Administrator, USNRC, Region III  
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NRC Resident Inspector – Prairie Island Nuclear Generating Plant

Attachment: Response to NRC TIA 2003-01, dated February 6, 2003

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**ATTACHMENT**

**NUCLEAR MANAGEMENT COMPANY, LLC  
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 and 2  
DOCKET NOS. 50-282 AND 50-306  
LICENSE NOS. DPR-42 AND DPR-60**

**LETTER NO. L-PI-03-039**

Response to NRC TIA 2003-01, dated February 6, 2003

4 pages follow

## **Response to NRC TIA 2003-01, dated February 6, 2003**

### **STATEMENTS FROM TIA:**

#### **Background**

On November 25, 2002, a Region III inspector identified an unresolved item associated with the licensee's failure to perform a volumetric examination of the Unit 1, [steam generator] SG 12 and Unit 2, SG 21 head-to-tubesheet W-A welds during the 1999 and 2002 refueling outages respectively.

For Unit 1, the licensee identified a flaw during the 1999 ultrasonic (UT) examination of the SG 11 head-to-tubesheet weld W-A that exceeded Code acceptance standards of Table IWB-3410-1. The licensee accepted the flaw in the SG 11 weld W-A that exceeded the Code allowable size for continued service based on an analysis derived in WCAP 14166, "Handbook on Flaw Evaluation for Prairie Island Units 1 and 2 Steam Generators and Pressurizer." However, the licensee did not expand the volumetric inspection scope to the SG 12 W-A weld during this outage as required by paragraph IWB-2430 of Section XI of the 1989 Edition no Addenda of the ASME Code. For the SG 12 W-A weld, the licensee had not completed an UT examination since 1998.

During the extent of condition review, the licensee identified that a similar condition also existed for the Unit 2 SG W-A welds. When the licensee examined the SG 22 weld W-A in February of 2002, 14 flaws were identified which exceeded Code acceptance standards of Table IWB-3410-1. The licensee applied a weld flaw analysis derived in WCAP 14166 to accept these flaws for continued service. However, the licensee did not expand the scope of the inspection to include UT examination of the SG 21 weld W-A during the 2002 outage. The licensee last performed a UT examination of 1/3 of the SG 21 weld W-A length in 2000 and another 1/3 of this weld length in 1997. The licensee had performed a full length UT examination of this weld in 1993.

#### **Applicable Code Requirements**

The licensee is in the third Code interval and was committed to requirements of Section XI, 1989 Edition, no Addenda of the ASME Code for these inservice examinations. Specifically, the SG head-to-tubesheet W-A welds were required to be volumetrically examined once per interval in accordance with TheTable IWB-2500, Category B.2.40.

Section XI, IWB-2430 requires "Examinations performed in accordance with Table IWB-2500-1 that reveal indications exceeding the acceptance standards of Table IWB-3410-1 shall be extended to include additional examinations at this outage. The additional examinations shall include the remaining welds, areas, or parts included in the inspection item listing..." This Code requirement implements prompt actions to determine the extent of potential degradation when inservice flaws are identified which exceed

Code limits. Therefore, the inspector was concerned that the licensee's decision to not examine weld W-A on SG 12 during the 1999 refueling outage and SG 21 during the 2002 refueling outage could have potentially allowed weld flaws of an unacceptable size to remain in service.

Section XI, IWB-2420(b) requires "If flaw indications or relevant conditions are evaluated in accordance with IWB-3132.4 or IWB-3142.4, respectively, and the component qualifies as acceptable for continued service, the areas containing such flaw indications or relevant conditions shall be reexamined during the next three inspection periods listed in the schedules of inspection programs of IWB 2410." For SG 11 and SG 22, the licensee was performing these successive examinations beginning in 1994 for SG 11 and 1989 for SG 22 after identification of subsurface flaws which exceeded acceptable sizes as identified in Table IWB-3410-1. The licensee staff believed that these subsurface flaw indications which exceeded Code acceptance criteria, were likely fabrication related weld defects (e.g., slag, inclusions, or weld porosity), vice service induced. However, the licensee's manual UT examination methods were not sufficient to confirm the flaw locations or to determine changes in flaw size (e.g., flaws indications sometimes got smaller in subsequent examinations). Therefore, the licensee staff had considered each flaw identified in the SG W-A welds that exceeded Code acceptance criteria during these examinations a "new" flaw.

#### **Licensee Decision to Not Expand Weld Examinations**

The licensee staff verbally discussed with the Region III inspector their decision to not apply the Section XI, IWB-2430 requirements to expand the scope of weld examinations for these SG W-A welds. The licensee staff had applied a successive examination schedule discussed in Section XI, IWB-2420 to the SG 11 and SG 22 W-A welds because flaws were identified that required an analysis to leave in service. The licensee staff then excluded application of IWB-2430 requirements to expand the extent of weld examinations to SG 12 and SG 21 W-A welds, because SG 11 and SG 22 W-A welds were in a successive examination schedule which began in 1994 and 1989 respectively. The licensee staff had interpreted the Section XI, IWB-2430 statement "examinations performed in accordance with Table IWB-2500-1," to allow excluding expansion of weld examinations for "new" weld flaws identified during successive examinations performed under IWB-2420.

#### **THE NUCLEAR MANAGEMENT COMPANY VIEW OF THE DECISION TO NOT EXPAND WELD EXAMINATIONS:**

The plant staff's decision to not apply the Section XI, IWB-2430 requirements to expand the scope of weld examinations for these SG W-A welds is as follows:

It is NMC's position that the Code does not address nor require an expansion to perform additional examinations during the conduct of successive examinations even if a flaw is detected that exceeds the acceptance criteria of IWB-3610-1.

It is agreed that successive examinations (reexaminations of the same examination areas) are required by IWB-2420 in the case where acceptance of flaw(s) by analytical evaluation is applied, as allowed by IWB-3132.4.

It is further agreed that IWB-2430 requires additional examinations (expansion of the examination scope to examinations of the same examination areas of similar components) when examinations performed in accordance with Table IWB-2500-1 (which includes examination frequencies) reveal indications exceeding the acceptance standards of Table-3410-1.

However, the examinations under question (for which NMC utilized the analytical evaluation provisions of IWB-3132.4 in order to determine acceptability) were not performed per the schedule of Table IWB-2500-1. They were performed per the requirements of IWB-2420 as discussed above. Therefore the requirement of IWB-2430(a) that "Examinations performed *in accordance with Table IWB-2500-1* that reveal indications exceeding the acceptance standards of Table IWB-3410-1 shall be extended to include additional examinations at this outage" (*italics added*) does not apply, and expansion of the examination scope is not required.

A recent ASME Section XI Technical Inquiry (IN02-022) presented at the February meeting in San Francisco supports this position. The inquiry directed to the Section XI Committee asked, "Is it a requirement of Section XI, IWB-2430, Additional Examinations (1989 Edition, no Addenda) to expand scope of weld examinations for "new" weld flaws identified during successive examinations performed under IWB-2420?" The response from the Committee stated, "Section XI does not address this issue." Therefore, if there is no prescriptive Code requirement to perform additional examinations, PINGP would not be in violation of the Code nor our procedures. Note that a formal written response has not yet been received but that an NMC representative, present during the meeting when the response was provided, wrote down the Committee's statement quoted above.

It should be noted that the NRC is planning to issue Revision 13 to Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," which includes (in the NRC's draft) Code Case N-526, proposed by NRC staff for approval without conditions.

ASME Section XI Code Case N-526, "Alternative Requirements for Successive Inspections of Class 1 and 2 Vessels Section XI Division 1" was approved by ASME on August 9, 1996. The Code Case asks, "What alternative requirements may be used for re-examinations required by IWB-2420(b) or IWC-2420(b) for vessel volumes found by volumetric examination to contain subsurface flaws?". The reply stated:

"It is the opinion of the Committee that re-examinations in accordance with IWB-2420(b) or IWC-2420(b) of vessel examination volumes containing subsurface flaws are not required, provided the following are met:

- (a) The flaw is characterized as subsurface in accordance with Fig. 1.
- (b) The [non-destructive evaluation] NDE technique and evaluation that detected and characterized the flaw, with respect to both sizing and location, shall be documented in the flaw evaluation report.
- (c) The vessel containing the flaw is acceptable for continued service in accordance with IWB-3600, and the flaw is demonstrated acceptable for the intended service life of the vessel.

The NRC's endorsement of this code case and its application would result in no successive examinations to be required for the areas with analyzed flaws and, correspondingly, there would be no expansion of examinations to similar components, regardless of the reading of IWB-2430.